CLAIMS

What is claimed is:

1. A method of treating or preventing sub-optimal urea cycle function in a subject, the method comprising administering to a subject in need thereof a therapeutically effective amount of a nitric oxide precursor, whereby treatment or prevention of sub-optimal urea cycle function is accomplished.

2. The method of claim 1, wherein the sub-optimal urea cycle function further comprises hyperammonemia or decreased arginine production.

3. The method of claim 1, wherein the subject is suffering from a disorder associated with impaired liver function or wherein the subject is exposed or about to be exposed to an environmental stimulus associated with impaired liver function.

4. The method of claim 3, wherein the disorder is selected from the group consisting of hepatitis, sclerosis, pulmonary hypertension, bone marrow transplant toxicity in a subject undergoing bone marrow transplant and combinations thereof.

5. The method of claim 3, wherein the environmental stimulus is selected from the group consisting of chemotherapy, cardiac surgery, increased oxidative stress, bone marrow transplant, and combinations thereof.

6. The method of claim 1, wherein the nitric oxide precursor is selected from the group consisting of citrulline, arginine and combinations thereof.

7. The method of claim 1, wherein the nitric oxide precursor is administered in a dose ranging from about 0.01 mg to about 1,000 mg.

8. The method of claim 7, wherein the nitric oxide precursor is administered in a dose ranging from about 0.5 mg to about 500 mg.

9. The method of claim 8, wherein the nitric oxide precursor is administered in a dose ranging from about 1.0 mg to about 250 mg.

10. The method of claim 1, wherein the subject is a human.

11. The method of claim 1, further comprising the step of initially detecting a polymorphism of a carbamyl phosphate synthase I (CPSI) gene in the subject.

12. The method of claim 11, wherein the polymorphism of the carbamyl phosphate synthetase polypeptide comprises a C to A transversion within CPSI exon 36.

13. The method of claim 12, wherein the polymorphism of the carbamyl phosphate synthetase polypeptide comprises a C to A transversion at nucleotide 4340 of a cDNA that corresponds to the CPSI gene.

14. The method of claim 13, wherein the C to A transversion at nucleotide 4340 of the cDNA that corresponds to the CPSI gene further comprises a change in the triplet code from AAC to ACC, which encodes a CPSI polypeptide having an threonine moiety at amino acid 1405.

15. A method of treating or preventing bone marrow transplant toxicity in a subject undergoing bone marrow transplant, the method comprising administering to the subject a therapeutically effective amount of a nitric oxide precursor, whereby bone marrow transplant toxicity is treated or prevented in the subject.

16. The method of claim 15, wherein the nitric oxide precursor is

selected from the group consisting of citrulline, arginine and combinations thereof.

17. The method of claim 15, wherein the nitric oxide precursor is administered in a dose ranging from about 0.01 mg to about 1,000 mg.

18. The method of claim 17, wherein the nitric oxide precursor is administered in a dose ranging from about 0.5 mg to about 500 mg.

19. The method of claim 18, wherein the nitric oxide precursor is administered in a dose ranging from about 1.0 mg to about 250 mg.

20. The method of claim 15, wherein the bone marrow transplant toxicity comprises hepatic veno-occlusive disease.

21. The method of claim 15, wherein the subject is a human.

22. The method of claim 15, further comprising the step of initially detecting a polymorphism of a carbamyl phosphate synthase I (CPSI) gene in the subject.

23. The method of claim 22, wherein the polymorphism of the carbamyl phosphate synthetase polypeptide comprises a C to A transversion within CPSI exon 36.

24. The method of claim 23, wherein the polymorphism of the carbamyl phosphate synthetase polypeptide comprises a C to A transversion at nucleotide 4340 of a cDNA that corresponds to the CPSI gene.

25. The method of claim 24, wherein the C to A transversion at nucleotide 4340 of the cDNA that corresponds to the CPSI gene further comprises a change in the triplet code from AAC to ACC, which encodes a CPSI polypeptide having an threonine moiety at amino acid 1405.